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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,501	01/16/2007	Tsuneki Wakita	295110US0PCT	8302
22850	7590	09/30/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WOODWARD, ANA LUCRECIA	
			ART UNIT	PAPER NUMBER
			1796	
			NOTIFICATION DATE	DELIVERY MODE
			09/30/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/589,501	<b>Applicant(s)</b> WAKITA ET AL.	
	<b>Examiner</b> Ana L. Woodward	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-17 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Election/Restrictions***

1. Claims 3 and 4 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected group, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on February 23, 2009.

***Claim Rejections - 35 USC § 112***

2. Claims 1 and 17 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for a graft copolymer comprising a rubbery polymer as the trunk polymer and vinyl-based monomers as the grafted units, does not reasonably provide enablement for the generically claimed modifier recited in claims 1 and 17. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

3. Claims 1, 2 and 5-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not describe how to make the presently claimed non-irradiated modifier having the specific particle sizes. In this regard, it is noted that the specification disclosure at page 16 [0018] states that spray drying gives rise to a graft

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copolymer having an average particle size of "200 nm (0.2 um) or more" whereas the disclosure at page 17 [0020] states that spray drying gives rise to particles having an average particle size of "20 um or more". Accordingly, the specification is not enabling with respect to the production of the claimed modifier.

4. Claims 1, 2 and 5-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 4, there is no express antecedent basis for "said particles having an average particle size of 10 um or less".

In claim 1, line 4, it is unclear if or how "an" amount, as opposed to "the" amount, limits the claimed subject matter.

In claims 1 and 17, it is unclear what the recited amounts are based upon.

In claims 1 and 17, it is unclear as to whether or not the non-irradiated modifier requires the presence of any "particles having an average particle size of 10 um or less" given that the lower limit of "less than 30% by mass" is zero.

In claims 1 and 17, the metes and bounds of the modifier are indeterminate in scope.

In claim 17, line 3, there is no express antecedent basis for "said irradiated particles having an average particle size of 10 um or less".

In claim 17, line 6, it is unclear if or how "an" amount, as opposed to "the" amount, limits the claimed subject matter.

***Claim Rejections - 35 USC § 102/103***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2 and 5-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious U.S. 5,017,631 (Rauch et al).

Rauch et al disclose spray-dried emulsion polymers consisting of aggregated latex particles having a specific particle-size distribution curve. Figures 1 to 5 disclose various non-irradiated spray-dried polymers wherein the majority of the particles have particle sizes of 20 um or more (meeting the generic presently claimed non-irradiated polymer). Suitable emulsion polymers include core/shell polymers comprising a core based on (meth)acrylic esters and a shell based on methyl methacrylate (meeting the graft copolymer required by present claim 16); see column 4, lines 43-46. The optimum

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particle size for the emulsion polymers ranges from 0.08 to 1 micron, embracing the particle size per claim 16.

The disclosure of the reference meets the requirements of the presently claimed non-irradiated modifier both with respect to the types of materials used and particle sizes. As to the present particle size property limitation after irradiation, given the similarity in both chemical make and preparation process between the present polymer and those disclosed by the reference, there is a reasonable basis for believing that the reference polymer would similarly possess the same property of generating, upon irradiation with an ultrasonic wave of 40 W for 5 minutes, a large proportion of particles having 10 um or less. In this regard, it is noted that the particle size distribution of the reference particles after ultrasonic treatment (under different conditions than those claimed) shows a larger proportion of smaller sized particle sizes as compared to those before ultrasonic treatment (Figure 1). The onus is shifted to applicants to establish that the product of the present claims is not the same as or obvious from that set forth by the reference.

8. Claim 17 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious U.S. 2001/0016612 (Kasai).

Kasai discloses an acrylic core/shell polymer having extremely fine particles. Note, for example, the core/shell polymers per Table 1 with particle sizes ranging from 80 to 2,000 nm. The core/shell polymers of the reference meet the requirements of the present claims with respect to the chemical make up and particle size. As to the “irradiated” product-by-process limitation, while the claims may recite a process step, it

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is the patentability of the product which must be established. The product is unpatentable because the prior art discloses a product which reasonably appears to identical to the claimed product. Thus, the burden shifts to applicants to provide objective evidence that the claimed product produced by irradiation is not the same as or obvious from the product of the prior art.

9. Claim 17 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious U.S. 6,051,650 (Endo et al).

Endo et al disclose graft copolymers governed by particle sizes falling within the scope of the present claims. See particle sizes of from 150 to 600 nm at column 5, lines 31-40, etc.

The graft polymers of the reference meet the requirements of the present claims with respect to the chemical make up and particle size. As to the "irradiated" product-by-process limitation, while the claims may recite a process step, it is the patentability of the product which must be established. The product is unpatentable because the prior art discloses a product which reasonably appears to identical to the claimed product. Thus, the burden shifts to applicants to provide objective evidence that the claimed product produced by irradiation is not the same as or obvious from the product of the prior art.

### ***Response to Amendment***

10. The amendments filed on August 23, 2010 have overcome the 35 USC 102/103 rejection of claims 1, 2 and 5-15 over Endo et al.

***Conclusion***

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ana L. Woodward whose telephone number is (571) 272-1082. The examiner can normally be reached on Monday, Tuesday, Thursday and Friday (7:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ana L. Woodward/  
Primary Examiner  
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